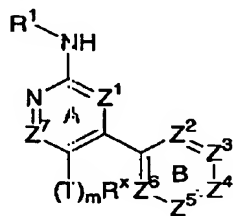


**Applicants:** Mark Ledeboer et al.  
**Application No.:** 10/700,333

## AMENDMENTS TO THE CLAIMS

Please replace all prior versions and listings of claims with the amended claims as follows:

1. (Currently amended) A compound of formula I:



# I

or a pharmaceutically acceptable salt thereof,

**wherein:**

**R<sup>1</sup> is Q-Ar<sup>1</sup>,**

wherein Q is a C<sub>1-2</sub> alkylidene chain wherein one methylene unit of Q is optionally replaced by O, NR, NRCO, NRCONR, NRCO<sub>2</sub>, CO, CO<sub>2</sub>, CONR, OC(O)NR, SO<sub>2</sub>, SO<sub>2</sub>NR, NRSO<sub>2</sub>, NRSO<sub>2</sub>NR, C(O)C(O), or C(O)CH<sub>2</sub>C(O);

Ar<sup>1</sup> is a 5-7 membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-12 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring system having 0-5 heteroatoms independently selected from nitrogen, oxygen, or sulfur; wherein Ar<sup>1</sup> is optionally substituted with q independent occurrences of Z-R<sup>2</sup>; wherein q is 0-5, Z is a bond or is a C<sub>1</sub>-C<sub>6</sub> alkylidene chain wherein up to two non-adjacent methylene units of Z are optionally and independently replaced by CO, CO<sub>2</sub>, COCO, CONR, OCONR, NRNR, NRNRCO, NRCO, NRCO<sub>2</sub>, NRCONR, SO, SO<sub>2</sub>, NRSO<sub>2</sub>, SO<sub>2</sub>NR, NRSO<sub>2</sub>NR, O, S, or NR; and each occurrence of R<sup>2</sup> is independently selected from R', halogen, NO<sub>2</sub>, CN, OR', SR', N(R')<sub>2</sub>, NR'COR', NR'CON(R')<sub>2</sub>,

Applicants: Mark Ledebøer et al.  
 Application No.: 10/700,333

$\text{NR}'\text{CO}_2\text{R}'$ ,  $\text{COR}'$ ,  $\text{CO}_2\text{R}'$ ,  $\text{OCOR}'$ ,  $\text{CON}(\text{R}')_2$ ,  $\text{OCON}(\text{R}')_2$ ,  $\text{SOR}'$ ,  $\text{SO}_2\text{R}'$ ,  
 $\text{SO}_2\text{N}(\text{R}')_2$ ,  $\text{NR}'\text{SO}_2\text{R}'$ ,  $\text{NR}'\text{SO}_2\text{N}(\text{R}')_2$ ,  $\text{COCOR}'$ , or  $\text{COCH}_2\text{COR}'$ ;

each occurrence of R is independently hydrogen or an optionally substituted  $\text{C}_{1-6}$  aliphatic group; and each occurrence of  $\text{R}'$  is independently hydrogen or an optionally substituted  $\text{C}_{1-6}$  aliphatic group, a 3-8-membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-12 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring system having 0-5 heteroatoms independently selected from nitrogen, oxygen, or sulfur; or R and  $\text{R}'$ , two occurrences of R, or two occurrences of  $\text{R}'$ , are taken together with the atom(s) to which they are bound to form an optionally substituted 3-12 membered saturated, partially unsaturated, or fully unsaturated monocyclic or bicyclic ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

$\text{Z}^1$  is N or ~~CH~~;

$\text{Z}^7$  is N or ~~C(U)~~ $\text{R}^Y$ ;

T and U are each independently a bond or a saturated or unsaturated  $\text{C}_{1-6}$  alkylidene chain, wherein up to two methylene units of the chain are optionally and independently replaced by CO,  $\text{CO}_2$ , COCO, CONR, OCONR, NRNR, NRNRCO, NRCO,  $\text{NRCO}_2$ , NRCONR, SO,  $\text{SO}_2$ ,  $\text{NRSO}_2$ ,  $\text{SO}_2\text{NR}$ ,  $\text{NRSO}_2\text{NR}$ , O, S, or NR;

m and n are each independently 0 or 1;

$\text{R}^X$  and  $\text{R}^Y$  are each independently selected from R or  $\text{Ar}^1$ ;

$\text{Z}^2$  is N or  $\text{CR}^2$ ;  $\text{Z}^3$  is N or  $\text{CR}^3$ ;  $\text{Z}^4$  is N or  $\text{CR}^4$ ;  $\text{Z}^5$  is N or  $\text{CR}^5$ ; and  $\text{Z}^6$  is N or  $\text{CR}^6$ , wherein each occurrence of  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$  or  $\text{R}^6$  is independently  $\text{R}^U$  or  $(\text{V})_p\text{R}^V$ , provided that a) no more than three of  $\text{Z}^2$ ,  $\text{Z}^3$ ,  $\text{Z}^4$ ,  $\text{Z}^5$  or  $\text{Z}^6$  is N, and b) at least one of  $\text{Z}^3$ ,  $\text{Z}^4$  or  $\text{Z}^5$  is  $\text{CR}^3$ ,  $\text{CR}^4$ , or  $\text{CR}^5$ , respectively, and at least one of  $\text{R}^3$ ,  $\text{R}^4$ , or  $\text{R}^5$  is  $\text{R}^U$ ,

each occurrence of  $\text{R}^U$  is  $\text{NRCOR}^7$ ,  $\text{CONR}(\text{R}^7)$ ,  $\text{SO}_2\text{NR}(\text{R}^7)$ ,  $\text{NRSO}_2\text{R}^7$ ,  $\text{NRCONR}(\text{R}^7)$ ,  $\text{NRSO}_2\text{NR}(\text{R}^7)$ , or  $\text{CONRNR}(\text{R}^7)$ , wherein  $\text{R}^7$  is  $(\text{CH}_2)_t\text{-Y-R}^8$ , and t is 0, 1, or 2, Y is a bond or is O, S,  $\text{NR}^9$ ,  $-\text{OCH}_2-$ ,  $-\text{SCH}_2-$ ,  $-\text{NR}^9\text{CH}_2-$ ,  $\text{O}(\text{CH}_2)_2-$ , -

Applicants: Mark Ledebøer et al.  
 Application No.: 10/700,333

$S(CH_2)_2$ , or  $-NR^9(CH_2)_2$ , and  $R^8$  is  $Ar^2$ , or  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form an optionally substituted 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur;

each occurrence of V is a bond or a saturated or unsaturated  $C_{1-6}$  alkylidene chain, wherein up to two methylene units of the chain are optionally and independently replaced by CO,  $CO_2$ , COCO, CONR, OCONR, NRNR, NRNRCO, NRCO, NR $CO_2$ , NRCONR, SO,  $SO_2$ , NRSO $_2$ ,  $SO_2NR$ , NRSO $_2NR$ , O, S, or NR;

each occurrence of p is 0 or 1;

each occurrence of  $R^V$  is R or  $Ar^2$ ; and

$Ar^2$  is a 5-7 membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-12 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring system having 0-5 heteroatoms independently selected from nitrogen, oxygen, or sulfur; wherein  $Ar^2$  is optionally substituted with r independent occurrences of  $W-R^W$ ; wherein r is 0-3, W is a bond or is a  $C_1-C_6$  alkylidene chain wherein up to two non-adjacent methylene units of W are optionally replaced by CO,  $CO_2$ , COCO, CONR, OCONR, NRNR, NRNRCO, NRCO, NR $CO_2$ , NRCONR, SO,  $SO_2$ , NRSO $_2$ ,  $SO_2NR$ , NRSO $_2NR$ , O, S, or NR; and each occurrence of  $R^W$  is independently selected from  $R'$ , halogen,  $NO_2$ , CN, OR', SR',  $N(R')_2$ , NR'COR', NR'CON(R') $_2$ , NR'CO $_2R'$ , COR', CO $_2R'$ , OCOR', CON(R') $_2$ , OCON(R') $_2$ , SOR', SO $_2R'$ , SO $_2N(R')_2$ , NR'SO $_2R'$ , NR'SO $_2N(R')_2$ , COCOR', or COCH $_2$ COR';

provided that:

- a) when  $Z^1$  is N,  $Z^7$  is CH [[:]] and ring B is phenyl and at least one of  $R^3$  or  $R^4$  is NHCOR $^7$ , then  $R^1$  is not phenyl only substituted with two or three occurrences of OR'; and

Applicants: Mark Ledebøer et al.  
Application No.: 10/700,333

b) when  $Z^1$  is N,  $Z^7$  is CH [[:]] and ring B is phenyl and at least one of  $R^3$  or  $R^4$  is  $NHCOR^7$ ,  $SO_2R^7$ ,  $CONRR^7$ , then  $R^1$  is not phenyl only substituted with one occurrence of  $-CON(R')_2$  in the para position.

2-3. (Canceled)

4. (Original) The compound of claim 1, wherein  $R^1$  is an optionally substituted phenyl, cyclohexyl, cyclopentyl, pyridyl, morpholino, piperazinyl, or piperidinyl group

5. (Original) The compound of claim 1, wherein  $R^1$  is an optionally substituted from phenyl, cyclohexyl, or pyridyl group.

6. (Original) The compound of claim 1, wherein  $R^1$  is optionally substituted phenyl.

7. (Original) The compound of claim 1, wherein q is 0, 1, 2, or 3 and each independent occurrence of  $ZR^Z$  is  $C_{1-4}$ alkyl,  $N(R')_2$ ,  $OR'$ ,  $SR'$ ,  $CON(R')_2$ ,  $NR'COR'$ ,  $NR'SO_2R'$ , or  $SO_2N(R')_2$ .

8. (Original) The compound of claim 1, wherein q is 1 and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-S(O)_2NH_2$ .

9. (Original) The compound of claim 1, wherein q is 1, and  $ZR^Z$  is in the meta position and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-S(O)_2NH_2$ .

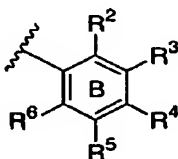
10. (Original) The compound of claim 1, wherein  $(T)_mR^X$  and  $(U)_nR^Y$  are hydrogen, halogen,  $NO_2$ , CN, OR, SR or  $N(R)_2$ , or  $C_{1-4}$ aliphatic optionally substituted with oxo, OR, SR,  $N(R)_2$ , halogen,  $NO_2$  or CN.

Applicants: Mark Ledebøer et al.  
Application No.: 10/700,333

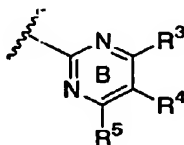
11. (Original) The compound of claim 1, wherein  $(T)_mR^X$  and  $(U)_nR^Y$  are each independently hydrogen, Me, OH, OMe or  $N(R)_2$ .

12. (Original) The compound of claim 1, wherein  $(T)_mR^X$  and  $(U)_nR^Y$  are each hydrogen.

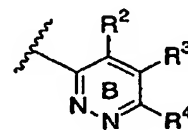
13. (Original) The compound of claim 1, wherein ring B is one of rings i-xiv:



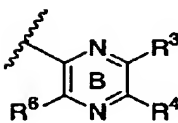
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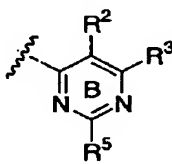
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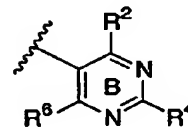
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iv



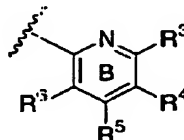
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vi



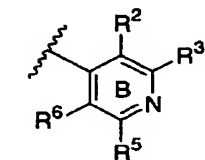
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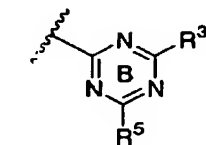
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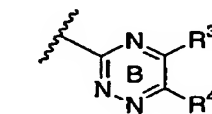
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x

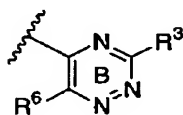


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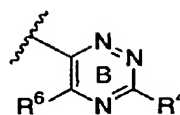


xii

Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333

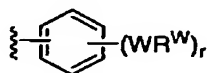


xiii

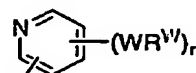


xiv

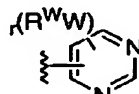
14. (Original) The compound of claim 1, wherein  $t$  is 0,  $Y$  is a bond, and  $R^8$  is an optionally substituted aryl or heteroaryl moiety.
15. (Original) The compound of claim 1, wherein  $t$  is 0,  $Y$  is a bond, and  $R^8$  is an optionally substituted heteroaryl moiety.
16. (Original) The compound of claim 1, wherein  $R^7$  is  $-\text{CH}_2-\text{Y}-\text{R}^8$ , and  $Y$  is  $\text{NR}^9$ ,  $\text{O}$  or  $\text{S}$ , and  $R^8$  is an optionally substituted aryl or heteroaryl moiety.
17. (Original) The compound of claim 1, wherein  $R^7$  is  $-\text{CH}_2-\text{Y}-\text{R}^8$ , and  $Y$  is  $\text{NR}^9$ ,  $\text{O}$  or  $\text{S}$ , and  $R^8$  is an optionally substituted aryl moiety.
18. (Original) The compound of claim 1, wherein  $t$  is 0 or 1,  $Y$  is  $\text{NR}^9$ , and  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur.
19. (Original) The compound of claim 1, wherein  $R^8$  is a 5- or 6-membered aryl or heteroaryl group having one of the formulae:



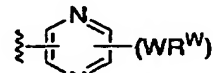
a



b

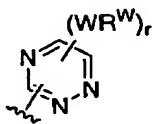


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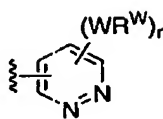


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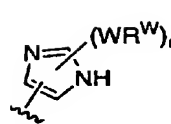
Applicants: Mark Ledebor et al.  
 Application No.: 10/700,333



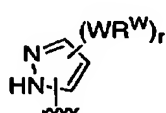
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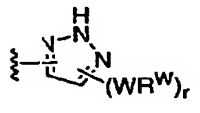
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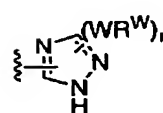
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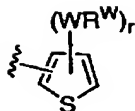
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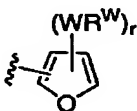
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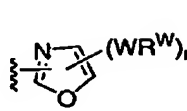
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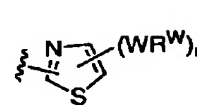
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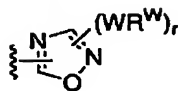
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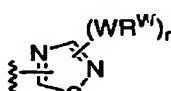
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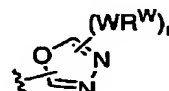
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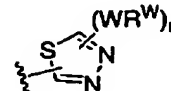
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p

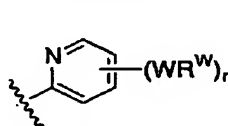


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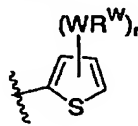


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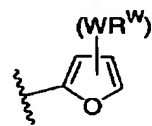
20. (Original) The compound of claim 1, wherein  $R^8$  is a 5- or 6-membered heteroaryl group having one of the formulae:



b-i

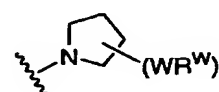
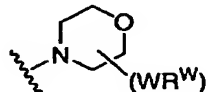
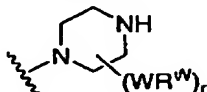
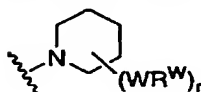


k-i



l-i

21. (Original) The compound of claim 1, wherein  $R^8$  and  $R^9$ , taken together, form a group having one of the formulae:



Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333

s

t

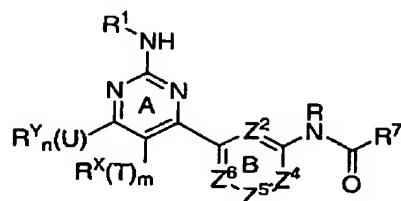
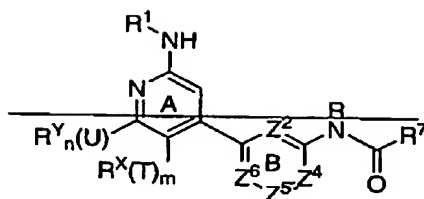
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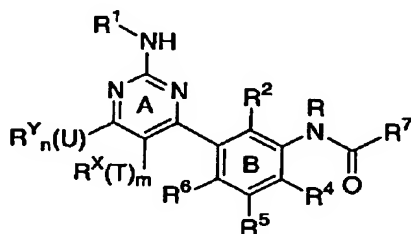
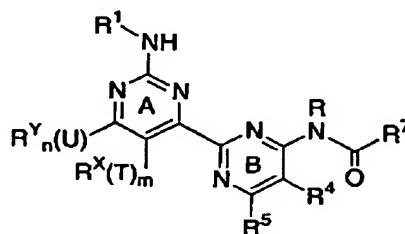
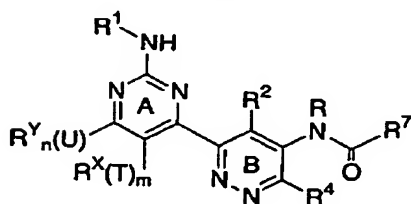
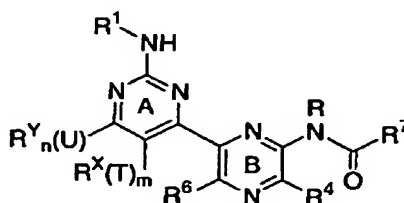
22. (Original) The compound of claim 1, wherein r is 0 or 1.
23. (Original) The compound of claim 19, 20, or 21, wherein r is 1, 2, or 3, and each occurrence of halogen, C<sub>1-4</sub>alkyl, -(R)<sub>2</sub>, -OR, -SR, -SO<sub>2</sub>N(R)<sub>2</sub>, -N(R)SO<sub>2</sub>R, -N(R)COR, -N(R)<sub>2</sub>, -CH<sub>2</sub>OR, -CH<sub>2</sub>N(R)<sub>2</sub>, or -CH<sub>2</sub>SR.
24. (Original) The compound of claim 19, 20, or 21, wherein t is 0, Y is a bond, and R<sup>8</sup> is an optionally substituted heteroaryl moiety selected from one of groups b through r.
25. (Original) The compound of claim 24, wherein R<sup>8</sup> is an optionally substituted heteroaryl group b-i, k-i, or l-i.
26. (Original) The compound of claim 1, wherein t is 1, Y is O, S or NR<sup>9</sup>, and R<sup>8</sup> is optionally substituted phenyl.
27. (Original) The compound of claim 1, wherein t is 0 or 1, Y is NR<sup>9</sup>, and R<sup>8</sup> and R<sup>9</sup>, taken together form an optionally substituted group selected from s, u or v.
28. (Currently amended) The compound of claim 1, wherein Z<sup>3</sup> or Z<sup>5</sup> is CR<sup>3</sup> or CR<sup>5</sup>, respectively, and R<sup>3</sup> or R<sup>5</sup> is NRC(O)R<sup>7</sup>, wherein R<sup>7</sup> is (CH<sub>2</sub>)<sub>t</sub>-Y-R<sup>8</sup>, wherein t is 0, 1 or 2, wherein Y is a bond or is O, S, NR<sup>9</sup>, -OCH<sub>2</sub>-, -SCH<sub>2</sub>-, -NR<sup>9</sup>CH<sub>2</sub>-, O(CH<sub>2</sub>)<sub>2</sub>-, -S(CH<sub>2</sub>)<sub>2</sub>-, or -NR<sup>9</sup>(CH<sub>2</sub>)<sub>2</sub>-, and wherein R<sup>8</sup> is Ar<sup>2</sup>, or R<sup>8</sup> and R<sup>9</sup>, taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur, and compounds have the formula ~~II-A~~ or ~~III-A~~:



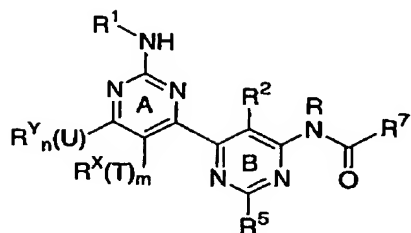
Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333

**II-A****III-A**

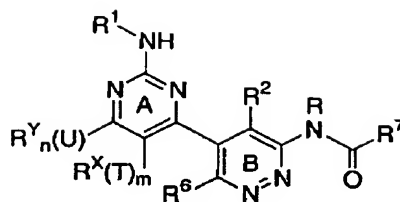
29. (Currently amended) The compound of claim 28, wherein for compounds of formula ~~II-A~~ ring B is selected from i, ii, iii, iv, v, vii, ~~viii~~, ix, x, xi, xii, or ~~xiii~~ and compounds have one of formulas **II-A-i**, **II-A-ii**, **II-A-iii**, **II-A-iv**, **II-A-v**, **II-A-vii**, **II-A-viii**, **II-A-ix**, **II-A-x**, **II-A-xi**, **II-A-xii**, or **II-A-xiii**:

**II-A-i****II-A-ii****II-A-iii****II-A-iv**

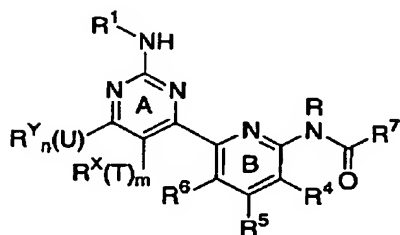
Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333



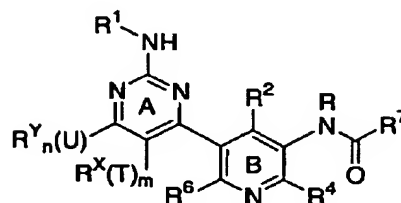
II-A-v



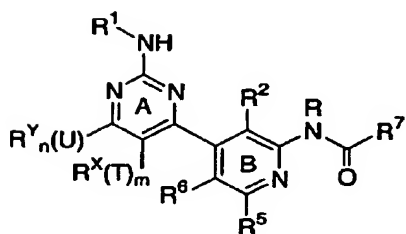
II-A-vii



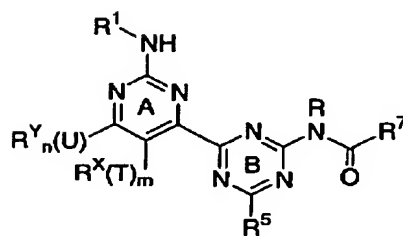
II-A-viii



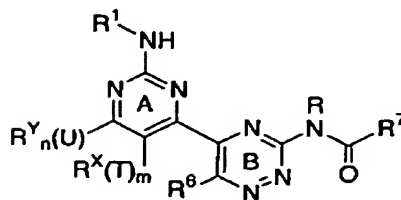
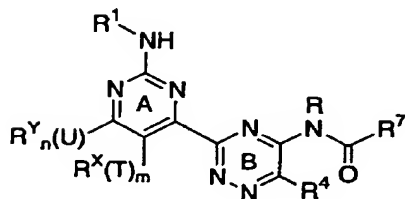
II-A-ix



II-A-x



II-A-xi



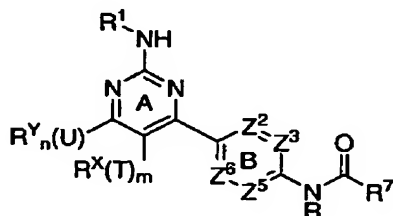
Applicants: Mark Ledebøer et al.  
 Application No.: 10/700,333

## II-A-xii

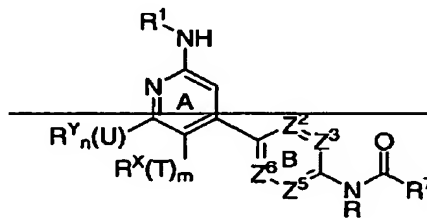
## II-A-xiii

30. (Canceled)

31. (Currently amended) The compound of claim 1, wherein  $Z^4$  is  $CR^4$ , and  $R^4$  is  $NRC(O)R^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , wherein  $t$  is 0, 1 or 2, wherein  $Y$  is a bond or is O, S,  $NR^9$ ,  $-OCH_2-$ ,  $-SCH_2-$ ,  $-NR^9CH_2-$ ,  $O(CH_2)_2-$ ,  $-S(CH_2)_2-$ , or  $-NR^9(CH_2)_2-$ , and wherein  $R^8$  is  $Ar^2$ , or  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur, and compounds have formula one of formulas II-B or ~~III-B~~:



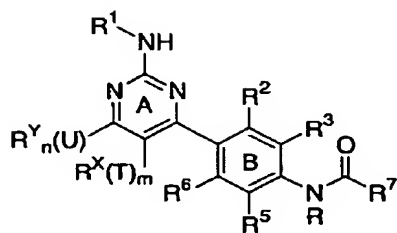
II-B



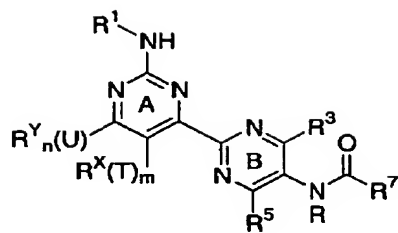
III-B

32. (Currently amended) The compound of claim 31, wherein ~~for compounds of formula II-B~~, ring B is selected from i, ii, iii, iv, vi, viii, ix, xii, or xiv and compounds have one of formulas II-B-i, II-B-ii, II-B-iii, II-B-iv, II-B-vi, II-B-viii, II-B-ix, II-B-xii, or II-B-xiv:

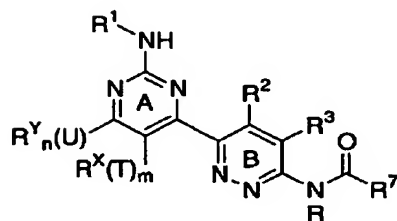
Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333



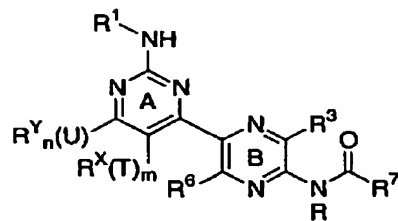
II-B-i



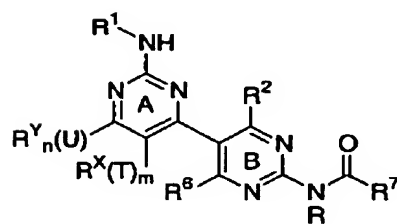
II-B-ii



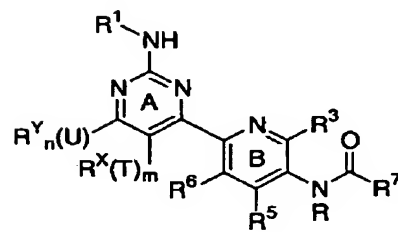
II-B-iii



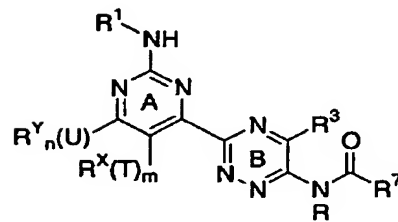
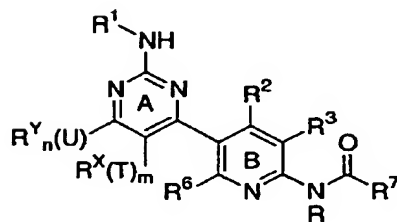
II-B-iv



II-B-vi



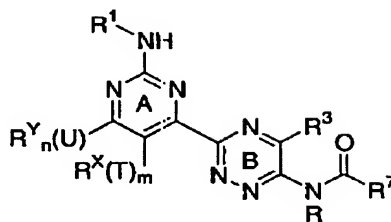
II-B-viii



Applicants: Mark Ledebuer et al.  
 Application No.: 10/700,333

II-B-ix

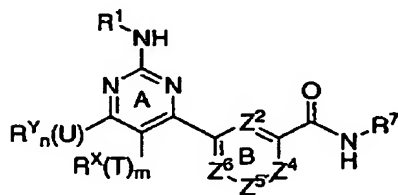
II-B-xii



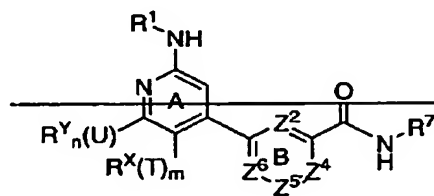
II-B-xiv

33. (Canceled)

34. (Currently amended) The compound of claim 1, wherein  $Z^3$  or  $Z^5$  is  $CR^3$  or  $CR^5$ , respectively, and  $R^3$  or  $R^5$  is  $C(O)N(R)(R^7)$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , wherein  $t$  is 0, 1 or 2, wherein  $Y$  is a bond or is O, S,  $NR^9$ ,  $-OCH_2-$ ,  $-SCH_2-$ ,  $-NR^9CH_2-$ ,  $O(CH_2)_2-$ ,  $-S(CH_2)_2-$ , or  $-NR^9(CH_2)_2-$ , and wherein  $R^8$  is  $Ar^2$ , or  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur and compounds have formula one of formulas II-C or III-C:



II-C

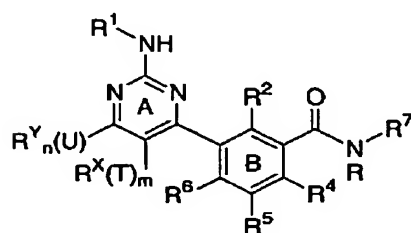


III-C

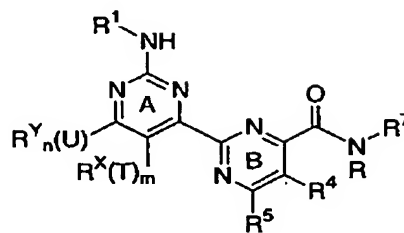
35. (Currently amended) The compound of claim 34, wherein ~~for compounds of formula II-C~~, ring B is selected from i, ii, iii, iv, v, vii, viii, ix, x, xi, xii, or xiii and

Applicants: Mark Ledebøer et al.  
 Application No.: 10/700,333

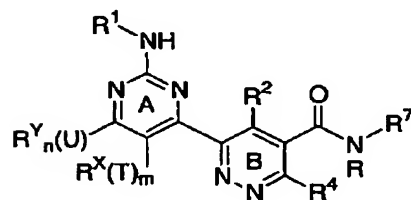
compounds have one of formulas II-C-i, II-C-ii, II-C-iii, II-C-iv, II-C-v, II-C-vii, II-C-viii, II-C-ix, II-C-x, II-C-xi, II-C-xii, or II-C-xiii:



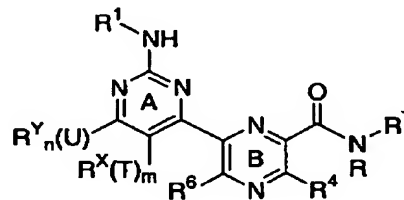
II-C-i



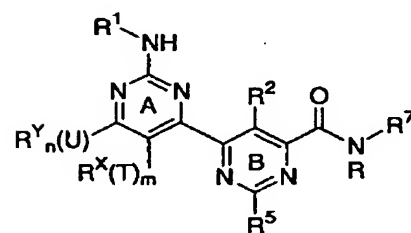
II-C-ii



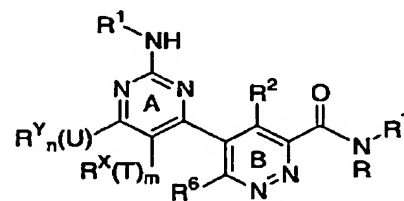
II-C-iii



II-C-iv

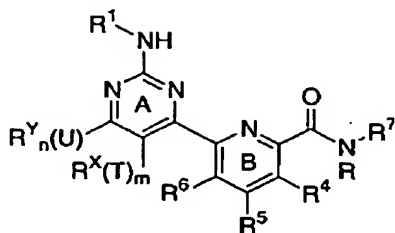


II-C-v

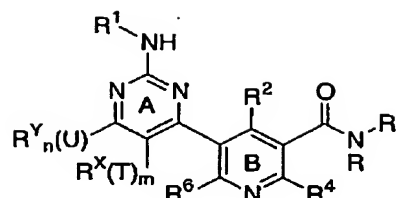


II-C-vii

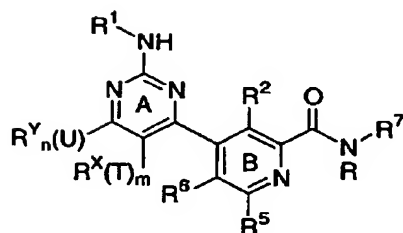
Applicants: Mark Ledebor et al.  
 Application No.: 10/700,333



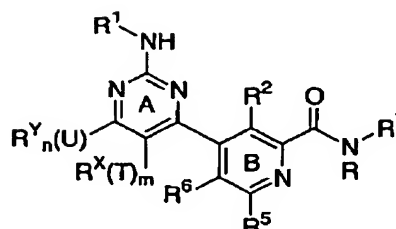
II-C-viii



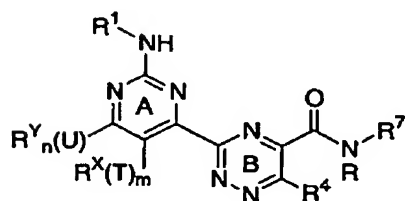
II-C-ix



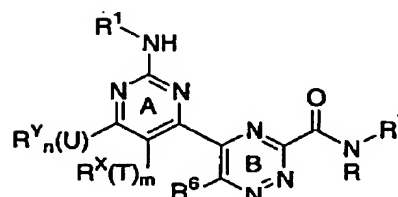
II-C-x



II-C-xi



II-C-xii



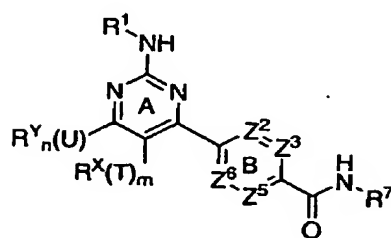
II-C-xiii

36. (Canceled)

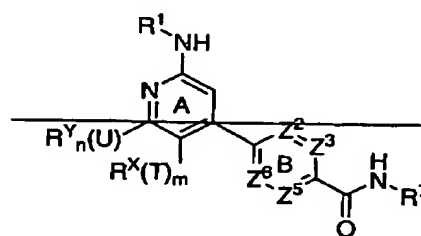
37. (Currently amended) The compound of claim 1, wherein  $Z^4$  is  $CR^4$ , and  $R^4$  is  $C(O)N(R)(R^7)$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , wherein  $t$  is 0, 1 or 2, wherein  $Y$  is a bond or is O, S,  $NR^9$ ,  $-OCH_2-$ ,  $-SCH_2-$ ,  $-NR^9CH_2$ ,  $O(CH_2)_2-$ ,  $-S(CH_2)_2$ , or  $-NR^9(CH_2)_2$ , and wherein  $R^8$  is  $Ar^2$ , or  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a 5-8

Applicants: Mark Ledebuer et al.  
 Application No.: 10/700,333

membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur and compounds have formula one of ~~formulas II-D or III-D~~:

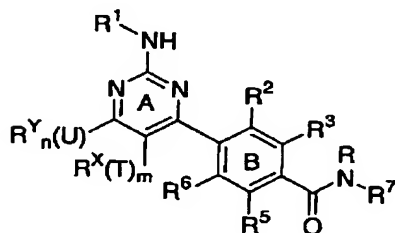


II-D

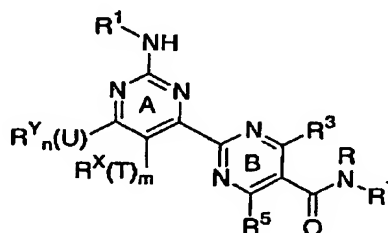


III-D

38. (Currently amended) The compound of claim 37, wherein ~~for compounds of formula II-D~~, ring B is selected from i, ii, iii, iv, vi, viii, ix, xii, or xiv and compounds have one of formulas II-D-i, II-D-ii, II-D-iii, II-D-iv, II-D-vi, II-D-viii, II-D-ix, II-D-xii, or II-D-xiv:



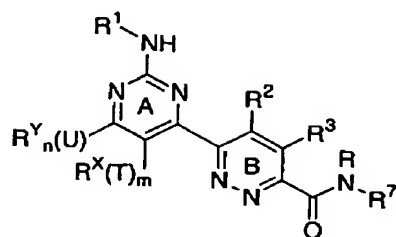
II-D-i



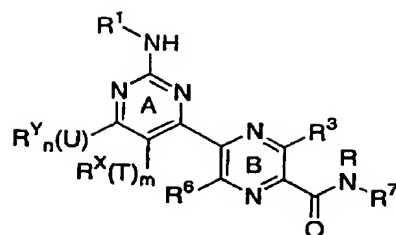
II-D-ii



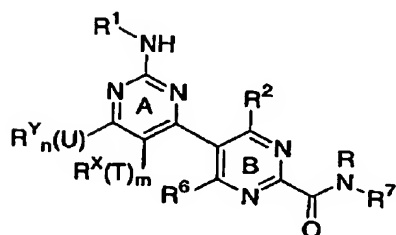
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333



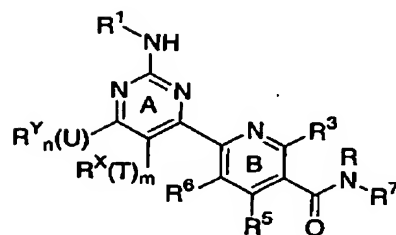
II-D-iii



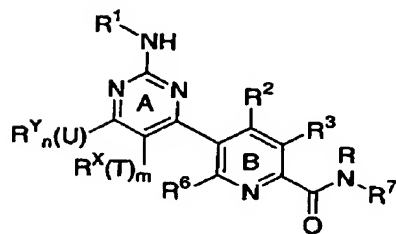
II-D-iv



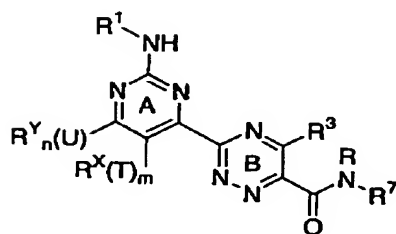
II-D-vi



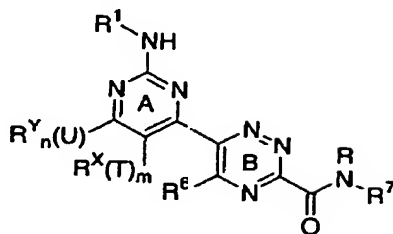
II-D-viii



II-D-ix



II-D-xii

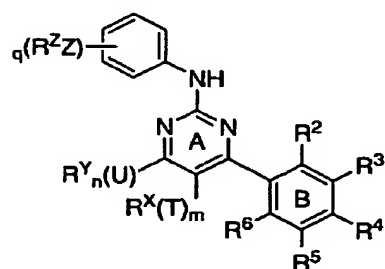


Applicants: Mark Ledebøer et al.  
 Application No.: 10/700,333

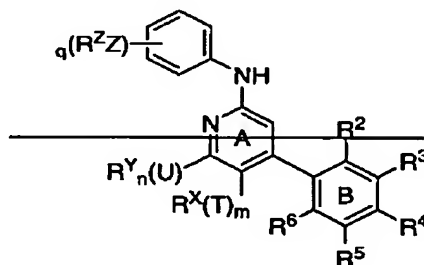
# II-D-xiv

39. (Canceled)

40. (Currently amended) The compound of claim 1, where  $R^1$  is optionally substituted phenyl and ring B is an optionally substituted phenyl group and compounds have the general formula ~~formulas~~ IV or V:

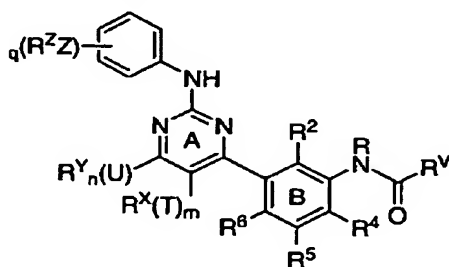


IV

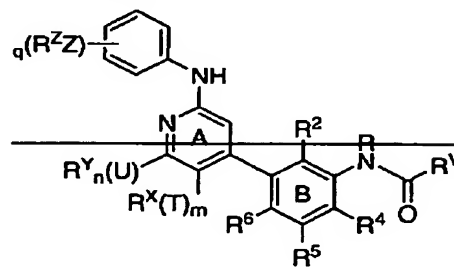


V

41. (Currently amended) The compound of claim 40, wherein,  $R^3$  is  $\text{NRCOR}^7$  and compounds have the general formula ~~formulas~~ IV-A-(i) or V-A-(i):



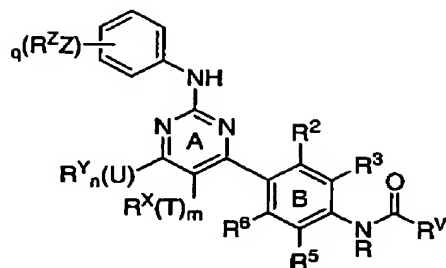
IV-A-(i)



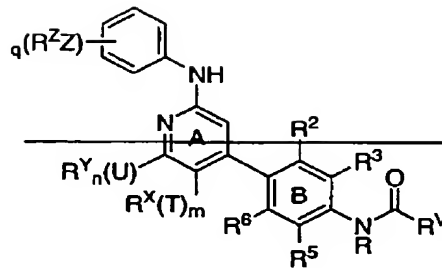
V-A-(i)

42. (Currently amended) The compound of claim 40, wherein  $R^4$  is  $\text{NRCOR}^7$  and compounds have the general formula ~~formulas~~ IV-B-(i) or V-B-(i):

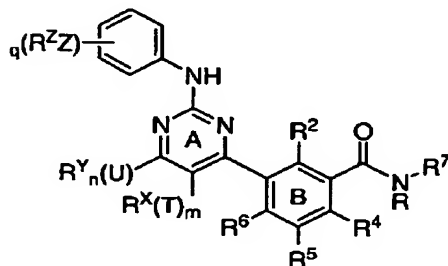
Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333



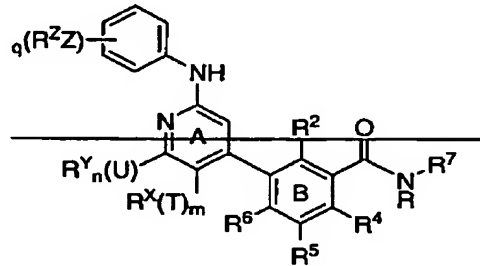
IV-B-(i)

~~V-B-(i)~~

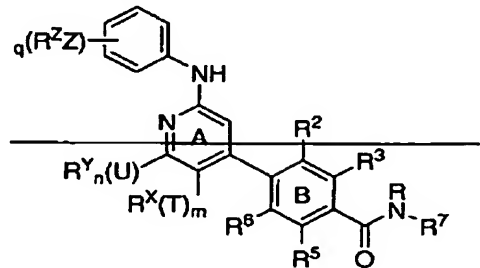
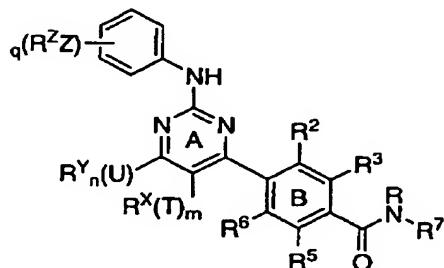
43. (Currently amended) The compound of claim 40, wherein R<sup>3</sup> is CONRR<sup>7</sup> and compounds have the general formula ~~formulae~~ IV-C-(i) or ~~V-C-(i)~~:



IV-C-(i)

~~V-C-(i)~~

44. (Currently amended) The compound of claim 40, wherein R<sup>4</sup> is CONRR<sup>7</sup> and compounds have the general formula ~~formulae~~ IV-D-(i) or ~~VII-D-(i)~~:

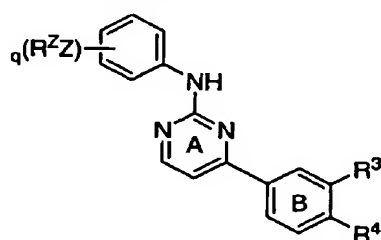


Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333

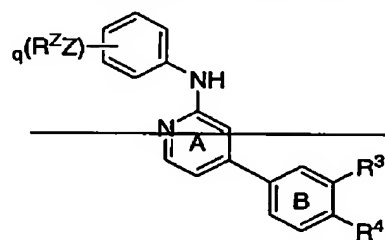
## IV-D-(i)

## V-D-(i)

45. (Currently amended) The compound of claim 40, wherein  $R^1$  is optionally substituted phenyl, ring A is pyrimidinyl or pyridyl, ring B is phenyl, and  $R^2$ ,  $R^5$ , and  $R^6$  are each hydrogen, and compounds have the general formulae VI and VII:



VI



VII

46. (Currently amended) The compound of claim 40 or 45, wherein  
 $q$  is 0 or 1 and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-SO_2NH_2$ ;  
 [[b.]] (b)  $R^3$  is  $NRCOR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0,  $Y$  is a bond, and  $R^8$  is phenyl (a), or is an optionally substituted heteroaryl moiety selected from one of groups b through r, and wherein  $r$  is 0 or 1, and  $WR^W$  substituents are halogen,  $C_{1-4}$ alkyl,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^4$  is hydrogen.
47. (Currently amended) The compound of claim 40 or 45, wherein:  
 [[a.]] (a)  $q$  is 0 or 1 and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-SO_2NH_2$ ;  
 [[b.]] (b)  $R^3$  is  $CONRR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0,  $Y$  is a bond, and  $R^8$  is phenyl (a) or is an optionally substituted heteroaryl moiety selected from one of groups b through r, and wherein  $r$  is 0 or 1, and  $WR^W$  substituents are halogen,  $C_{1-4}$ alkyl,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^4$  is hydrogen.

Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333

48. (Currently amended) The compound of claim 40 or 45, wherein:  
 [[a.]] (a)  $q$  is 0 or 1 and  $ZR^z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-S(O)_2NH_2$ ;  
 [[b.]] (b)  $R^4$  is  $NRCOR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0,  $Y$  is a bond, and  $R^8$  is phenyl (a) or an optionally substituted heteroaryl moiety selected from one of groups  $b$  through  $z$ , and wherein  $r$  is 0 or 1, and  $WR^w$  substituents are halogen,  $C_{1-4}$ alkyl,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^3$  is hydrogen.
49. (Currently amended) The compound of claim 40 or 45, wherein:  
 [[a.]] (a)  $q$  is 0 or 1 and  $ZR^z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-S(O)_2NH_2$ ;  
 [[b.]] (b)  $R^4$  is  $CONRR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0,  $Y$  is a bond, and  $R^8$  is phenyl (a) or an optionally substituted heteroaryl moiety selected from one of groups  $b$  through  $z$ , and wherein  $r$  is 0 or 1, and  $WR^w$  substituents are halogen,  $C_{1-4}$ alkyl,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^3$  is hydrogen.
50. (Currently amended) The compound of claim 40 or 45, wherein:  
 [[a.]] (a)  $q$  is 0 or 1 and  $ZR^z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}$ alkoxy, or  $-S(O)_2NH_2$ ;  
 [[b.]] (b)  $R^3$  is  $NRCOR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0 or 1,  $Y$  is  $NR^9$ , and  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a group selected from  $s$ ,  $t$ ,  $u$ , or  $v$ , and wherein  $r$  is 0 or 1, and  $WR^w$  substituents are halogen,  $C_{1-4}$ alkyl,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^4$  is hydrogen.
51. (Currently amended) The compound of claim 40 or 45, wherein:

Applicants: Mark Ledebner et al.  
 Application No.: 10/700,333

[[a.]] (a)  $q$  is 0 or 1 and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}alkoxy$ , or  $-S(O)_2NH_2$ ;  
 [[b.]] (b)  $R^3$  is  $CONRR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0 or 1,  $Y$  is  $NR^9$ , and  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a group selected from  $s$ ,  $t$ ,  $u$ , or  $v$ , and wherein  $r$  is 0 or 1, and  $WR^W$  substituents are halogen,  $C_{1-4}alkyl$ ,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^4$  is hydrogen.

52. (Currently amended) The compound of claim 40 or 45, wherein:

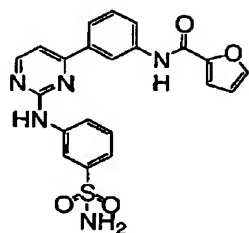
[[a.]] (a)  $q$  is 0 or 1 and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}alkoxy$ , or  $-S(O)_2NH_2$ ;  
 [[b.]] (b)  $R^4$  is  $NRCOR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0 or 1,  $Y$  is  $NR^9$ , and  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a group selected from  $s$ ,  $t$ ,  $u$ , or  $v$ , and wherein  $r$  is 0 or 1, and  $WR^W$  substituents include halogen,  $C_{1-4}alkyl$ ,  $NH_2$ ,  $OH$ ,  $SH$ ,  $SO_2NH_2$ ,  $C_{1-4}alkoxy$ ,  $C_{1-4}thioalkyl$ ,  $CH_2OR$ ,  $CH_2N(R)_2$ , or  $CH_2SR$ ; and  
 [[c.]] (c)  $R^3$  is hydrogen.

53. (Currently amended) The compound of claim 40 or 45, wherein:

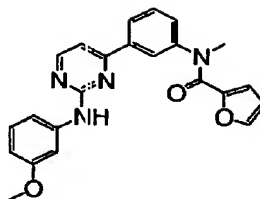
[[a.]] (a)  $q$  is 0 or 1 and  $ZR^Z$  is  $-NH_2$ ,  $-OH$ ,  $C_{1-4}alkoxy$ , or  $-S(O)_2NH_2$ ;  
 [[b.]] (b)  $R^4$  is  $CONRR^7$ , wherein  $R^7$  is  $(CH_2)_t-Y-R^8$ , and  $t$  is 0 or 1,  $Y$  is  $NR^9$ , and  $R^8$  and  $R^9$ , taken together with the nitrogen atom, form a group selected from  $s$ ,  $t$ ,  $u$ , or  $v$ , and wherein  $r$  is 0 or 1, and  $WR^W$  substituents are halogen,  $C_{1-4}alkyl$ ,  $-(R)_2$ ,  $-OR$ ,  $-SR$ ,  $-SO_2N(R)_2$ ,  $-N(R)SO_2R$ ,  $-N(R)COR$ ,  $-N(R)_2$ ,  $-CH_2OR$ ,  $-CH_2N(R)_2$ , or  $-CH_2SR$ ; and  
 [[c.]] (c)  $R^3$  is hydrogen.

54. (Currently amended) The compound of claim 1, having one of the following structures:

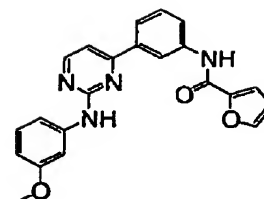
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333



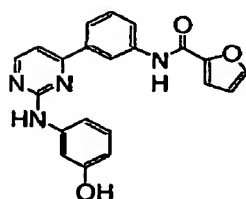
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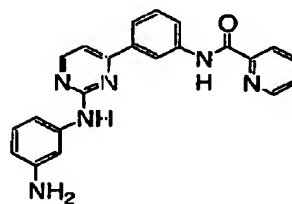
IV-A(i)-2



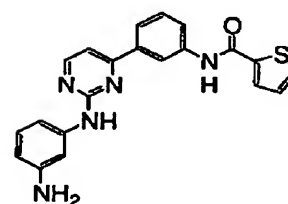
IV-A(i)-3



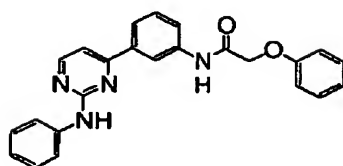
IV-A(i)-4



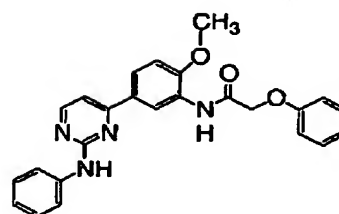
IV-A(i)-5



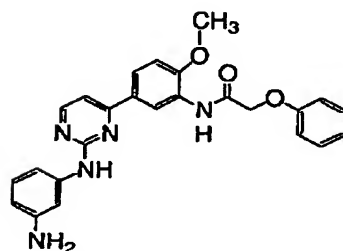
IV-A(i)-6



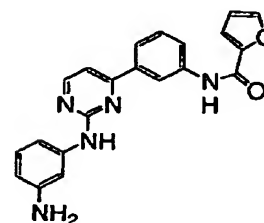
IV-A(i)-7



IV-A(i)-8

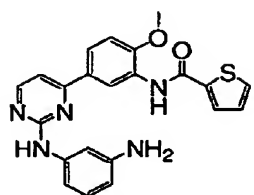


IV-A(i)-9

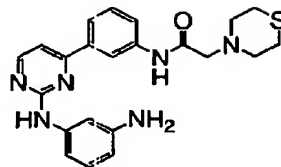


IV-A(i)-10

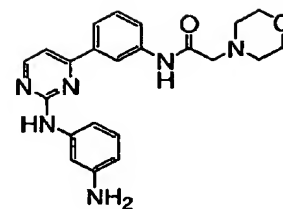
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333



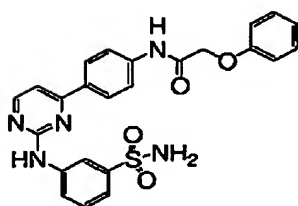
IV-A(i)-11



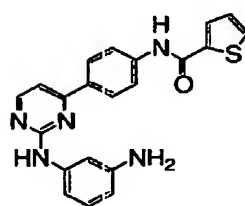
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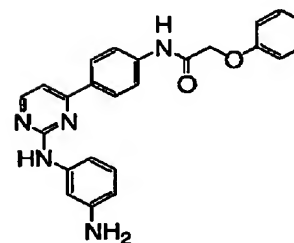
IV-A(i)-13



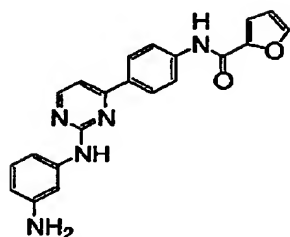
IV-B(i)-1



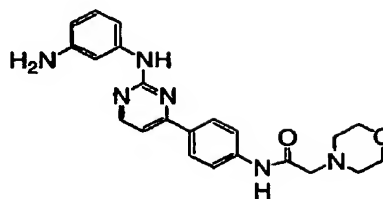
IV-B(i)-2



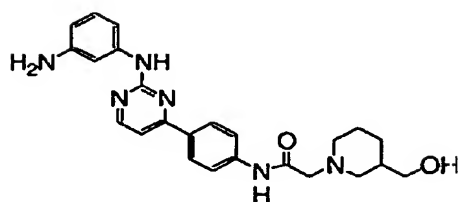
IV-B(i)-3



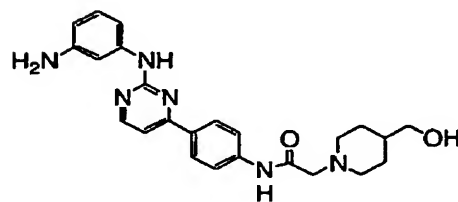
IV-B(i)-4



IV-B(i)-5



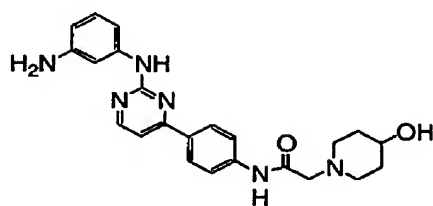
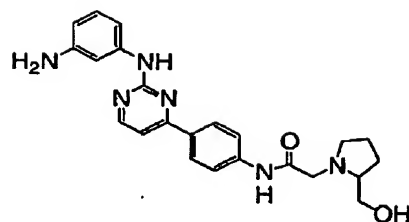
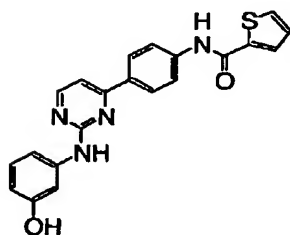
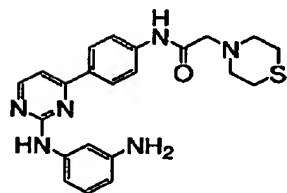
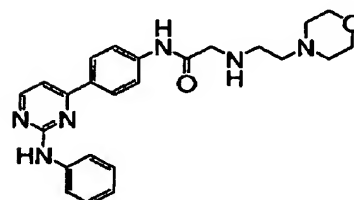
IV-B(i)-6



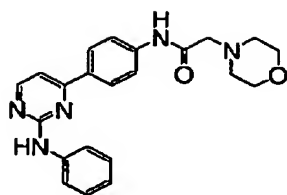
IV-B(i)-7



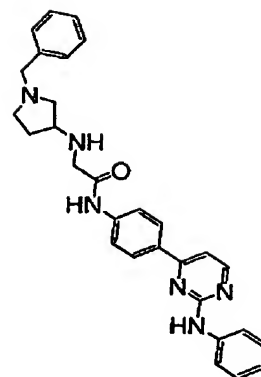
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333

**IV-B(i)-8****IV-B(i)-9****IV-B(i)-10****IV-B(i)-11****IV-B(i)-12****IV-B(i)-13**

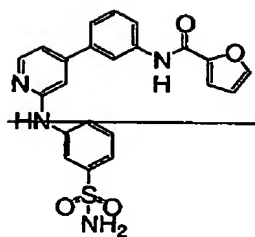
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333



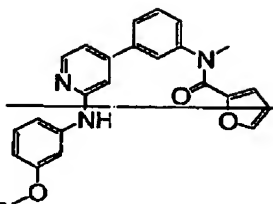
IV-B(i)-14



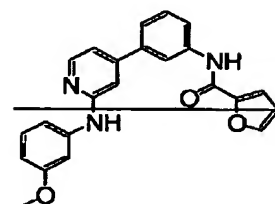
IV-B(i)-15



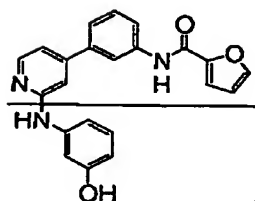
V-A(i)-1



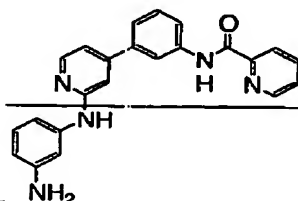
V-A(i)-2



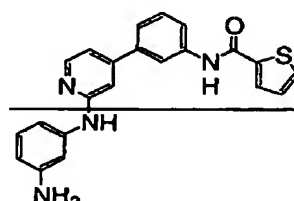
V-A(i)-3



V-A(i)-4

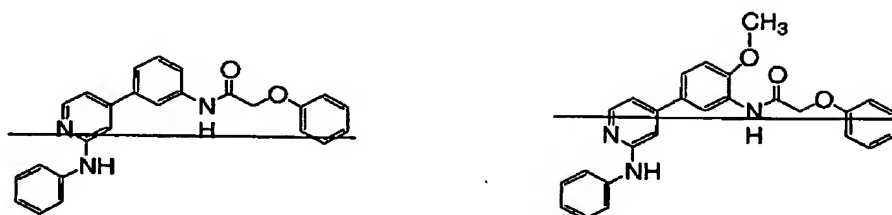


V-A(i)-5



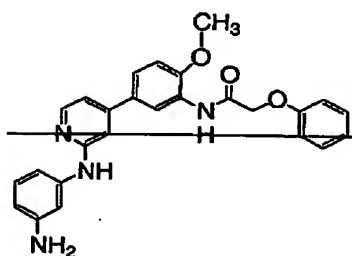
V-A(i)-6

Applicants: Mark Ledebor et al.  
Application No.: 10/700,333

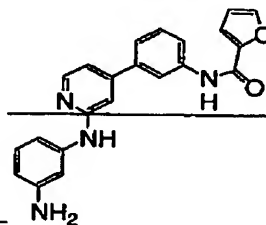


~~V-A(i)-7~~

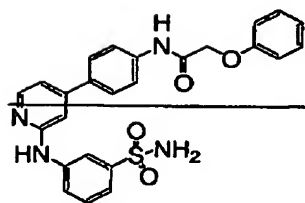
~~V-A(i)-8~~



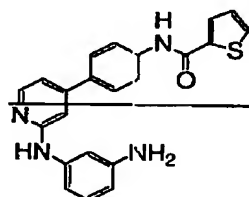
~~V-A(i)-9~~



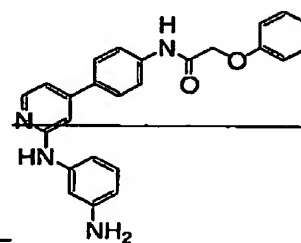
~~V-A(i)-10~~



~~V-B(i)-1~~

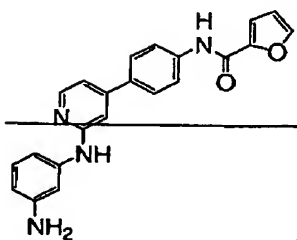
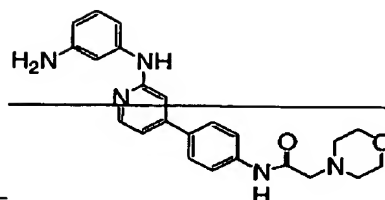
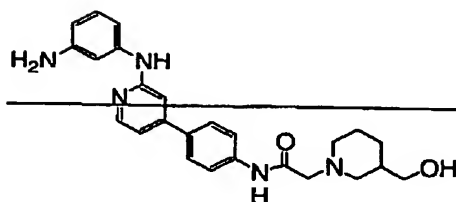
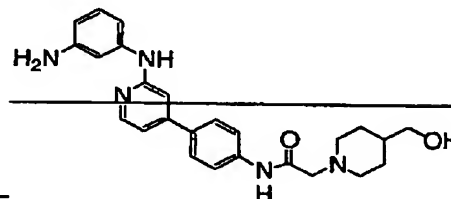
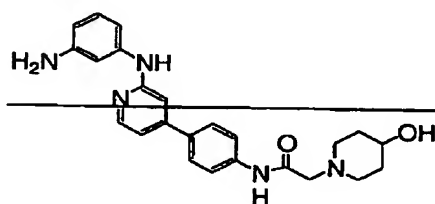
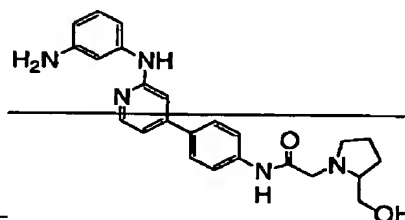
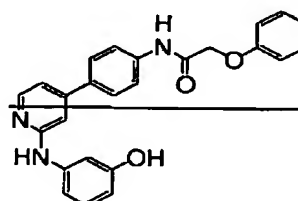
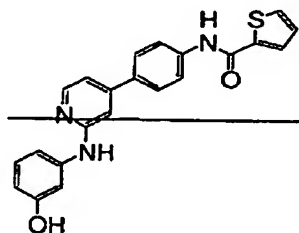


~~V-B(i)-2~~



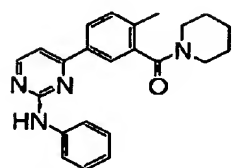
~~V-B(i)-3~~

Applicants: Mark Ledebor et al.  
Application No.: 10/700,333

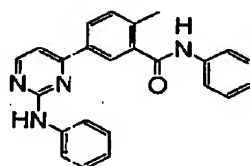
~~V-B(i)-4~~~~V-B(i)-5~~~~V-B(i)-6~~~~V-B(i)-7~~~~V-B(i)-8~~~~V-B(i)-9~~

Applicants: Mark Ledebor et al.  
Application No.: 10/700,333

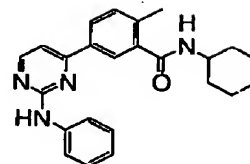
~~V-B(i)-10~~ ————— ~~V-B(i)-11~~



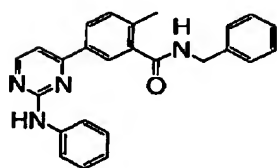
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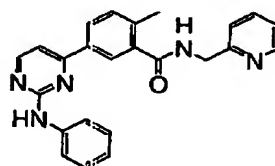
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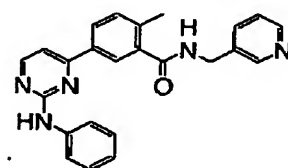
IV-C(i)-3



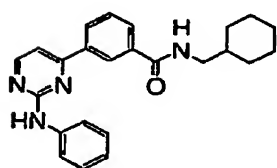
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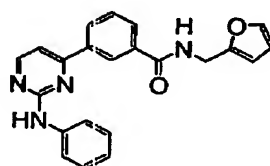
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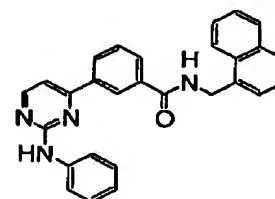
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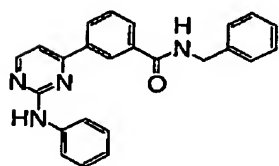
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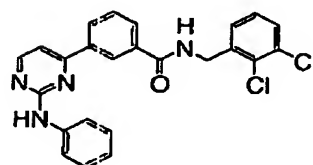
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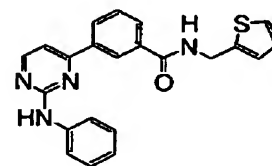
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IV-C(i)-10

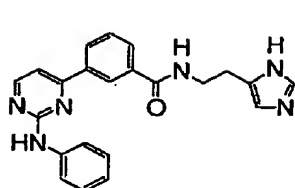


IV-C(i)-11

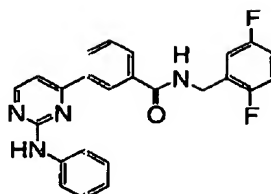


IV-C(i)-12

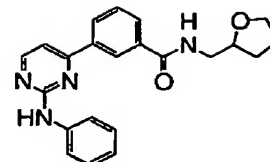
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333



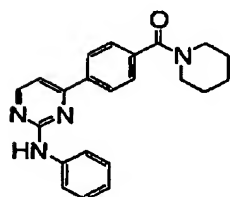
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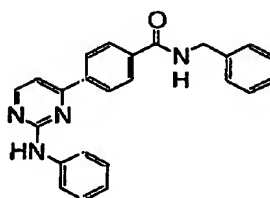
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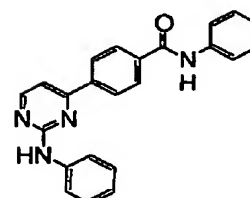
IV-C(i)-15



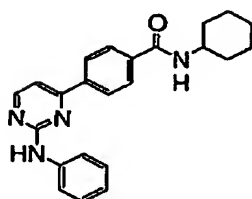
IV-D(i)-1



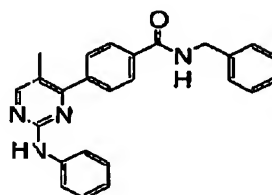
IV-D(i)-2



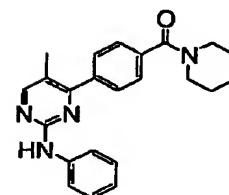
IV-D(i)-3



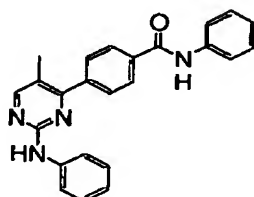
IV-D(i)-4



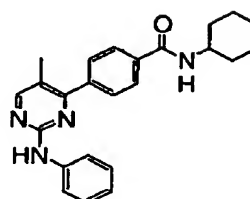
IV-D(i)-5



IV-D(i)-6



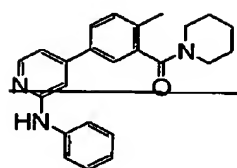
IV-D(i)-7



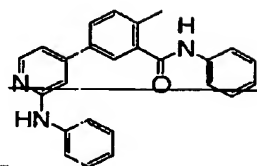
IV-D(i)-8

Applicants: Mark Ledebor et. al.

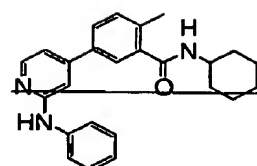
Application No.: 10/700,333



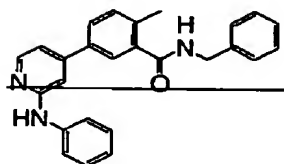
V-C(i)-1



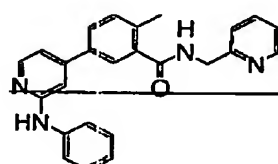
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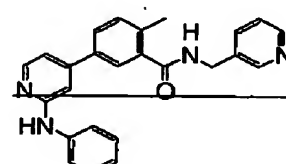
V-C(i)-3



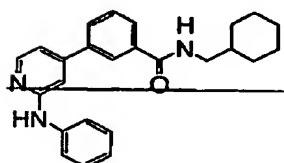
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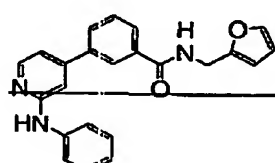
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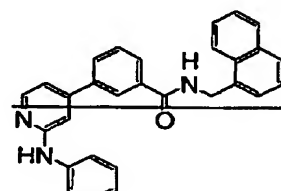
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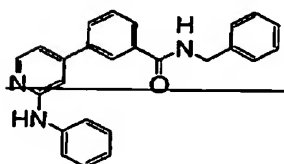
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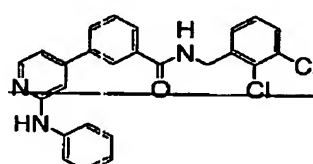
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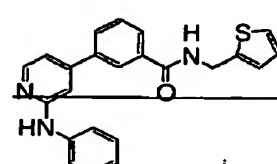
V-C(i)-9



V-C(i)-10

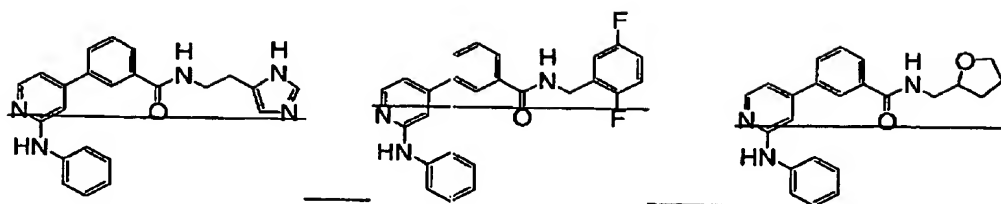


V-C(i)-11



V-C(i)-12

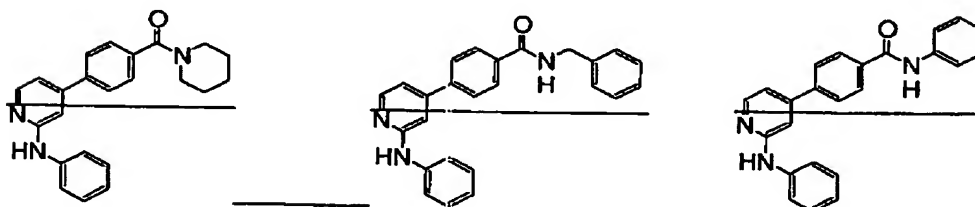
Applicants: Mark Ledebor et al.  
Application No.: 10/700,333



**V-C(i)-13**

**V-C(i)-14**

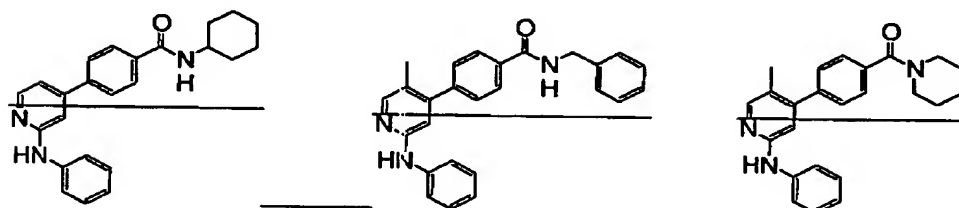
**V-C(i)-15**



**V-D(i)-1**

**V-D(i)-2**

**V-D(i)-3**



**V-D(i)-4**

**V-D(i)-5**

**V-D(i)-6**



**V-D(i)-7**

**V-D(i)-8**



Applicants: Mark Ledéboer et al.  
Application No.: 10/700,333

55. (Original) A pharmaceutical composition comprising a compound according to claim 1, and a pharmaceutically acceptable carrier, adjuvant, or vehicle.

56. (Original) The composition of claim 55, further comprising an additional therapeutic agent selected from a chemotherapeutic or anti-proliferative agent, a treatment for Alzheimer's Disease, a treatment for Parkinson's Disease, an agent for treating Multiple Sclerosis (MS), a treatment for asthma, an agent for treating schizophrenia, an anti-inflammatory agent, an immunomodulatory or immunosuppressive agent, a neurotrophic factor, an agent for treating cardiovascular disease, an agent for treating destructive bone disorders, an agent for treating liver disease, an agent for treating a blood disorder, or an agent for treating an immunodeficiency disorder.

57. (Original) A method of inhibiting JAK kinase activity in a biological sample or a patient, comprising the step of contacting said biological sample or patient with:

- a) the composition of claim 55; or
- b) the compound of claim 1.

58. (Original) A method of treating or lessening the severity of a disease or disorder selected from an immune response, an autoimmune disease, a neurodegenerative disorder, or a solid or hematologic malignancy comprising administering to a patient in need thereof a compound of claim 1 or a composition of claim 55.

59. (Original) The method of claim 58, wherein the disease is an allergic or type I hypersensitivity reaction, asthma, transplant rejection, graft versus host disease, rheumatoid arthritis, amyotrophic lateral sclerosis, multiple sclerosis, Familial amyotrophic lateral sclerosis (FALS), leukemia, or lymphoma.